

REMARKS

[0001] Applicant respectfully requests reconsideration and allowance of all of the claims of the application. Claims 1-59 are presently pending. Claims 1, 2, 6-9, 11, 13-16, 18, 20, 21, 25-28, 30, 32-35, 37, 39-54, 58, and 59 are amended herein; no claims are withdrawn or cancelled herein; and no new claims are added herein.

Formal Request for an Interview

[0002] If the Examiner's reply to this communication is anything other than allowance of all pending claims, then I formally request an interview with the Examiner. I encourage the Examiner to call me—the undersigned representative for the Applicant—so that we can talk about this matter so as to resolve any outstanding issues quickly and efficiently over the phone.

[0003] Please contact me or my assistant to schedule a date and time for a telephone interview that is most convenient for both of us. While email works great for us, I welcome your call to either of us as well. Our contact information may be found on the last page of this response.

Allowable Subject Matter

[0004] Applicant would like to thank the Examiner for indicating that claims 14-18, and 33-37 would be allowable if rewritten in independent form.

[0005] Furthermore, Applicant would like to thank the Examiner for indicating that claims 50-52 would be allowable if rewritten in independent form and amended to overcome the rejections under 35 USC 112, 2nd ¶. These claims have been amended herein to overcome the rejections under 35 USC 112, 2nd ¶.

Claim Amendments

[0006] Without conceding the propriety of the rejections herein and in the interest of expediting prosecution, Applicant amends claims 1, 2, 6-9, 11, 13-16, 18, 20, 21, 25-28, 30, 32-35, 37, 39-54, 58, and 59 herein.

Formal Matters

[0007] This section addresses any formal matters (e.g., objections) raised by the Examiner.

Claims

[0008] The Examiner objects to claim 52 for reciting “the a transport layer.” Claim 52 is amended herein to correct this typographical error. Accordingly, Applicant respectfully requests that the objection to claim 52 be withdrawn.

[0009] The Examiner objects to claims 14-18, 33-37, and 50-52 as being dependent upon a rejected base claim, but indicates that these claims would be allowable if rewritten in independent form. Claims 14-18 ultimately depend upon independent claim 1. Claim 1 has been amended, and as explained below, is in condition for allowance. Similarly, claims 33-37 ultimately depend upon independent claim 20, and claims 50-52 ultimately depend upon independent claim 39. Claims 20 and 39 have been amended, and as explained below, are in condition for allowance. Accordingly, Applicant respectfully requests that the objection to claims 14-18, 33-37, and 50-52 be withdrawn.

Substantive Matters

Claim Rejections under §112 2nd ¶

[0010] Claims 40-53 are rejected under 35 U.S.C. §112, 2nd ¶ as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, claims 40-50 recite the limitation “The system” in line 1, for which there is insufficient antecedent basis; and claims 51-53 recite the limitation “The host” in line 1, for which there is insufficient antecedent basis. Applicant herein amends claims 40-53 to correct these deficiencies. Accordingly, Applicant asks the Examiner to withdraw these rejections.

Claim Rejections under §102

[0011] Claims 1-13, 19-32, 38-49, and 53-59 are rejected under 35 U.S.C. §102. In light of the amendments presented herein, Applicant submits that the rejections of claims 1-13, 19-32, 38-49, 53, and 59 are moot. Furthermore, for the reasons set forth below, Applicant submits that these claims are in condition for allowance. For the reasons set forth below, the Examiner has not shown that the cited reference anticipates rejected claims 54-58. Accordingly, Applicant respectfully requests that the §102 rejection be withdrawn and the case be passed along to issuance.

[0012] The Application describes a technology for supporting point-to-point intracluster communications between replicated cluster nodes, while enabling communication protocol layer components of the cluster nodes to continue to operate in a cluster mode.

[0013] The Examiner's rejection is based upon **Bommareddy**: *Bommareddy, et al.*, US Patent No. 6,880,089, which describes firewall clustering for multiple network servers to supply high-availability and scaling of processing capacity. Flow controllers are placed on both sides of the firewalls to ensure that traffic for a given client-server session flows through the same firewall in both inbound and outbound directions. (Bommareddy, Abstract).

Anticipation Rejections

[0014] Applicant submits that the anticipation rejections are not valid (for claims 54-58) or are moot in light of the amendments presented herein (for claims 1-13, 19-32, 38-49, 53, and 59) because, for each rejected claim no single reference discloses each and every element of that rejected claim.¹ Furthermore, the elements disclosed in the single reference are not arranged in the manner recited by each rejected claim.²

Based upon Bommareddy

[0015] The Examiner rejects claims 1-13, 19-32, 38-49, and 53-59 under 35 U.S.C. §102(e) as being anticipated by Bommareddy. Applicant respectfully traverses the rejection of claims 54-58. Based on the amendments presented herein and the reasons given below, Applicant asks the Examiner to withdraw the rejection of claims 1-13, 19-32, 38-49, and 53-59.

¹ "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); also see MPEP §2131.

² See *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Independent Claim 1

[0016] Applicant submits that Bommareddy does not disclose the following elements of claim 1, as amended (emphasis added):

A method for conducting physical address discovery, **facilitating point-to-point communications between hosts of a cluster** operating in a cluster mode wherein acceptable messages are addressed to a shared cluster address, the method comprising the steps of:

receiving by a target host within the cluster, an address discovery request initiated by a source host seeking a physical address of the target;
and

generating by the target host, an address discovery response acceptable by the source host operating in the cluster mode, wherein the address discovery response comprises:

a response source physical address field specifying a non-cluster mode physical address of the target host.

[0017] With reference to claim 1, the Examiner cites Bommareddy column 22, lines 46-64; column 22, lines 53-60; and column 22, line 65 – column 23, lines 7. (Office Action, pages 3-4.) With specific reference to the “receiving” step, the Examiner states, referring to the cited portion of Bommareddy, “router or server “source host” may send an ARP request to find out the address of destination server.” (Office Action, page 3.) With specific reference to the “generating” step, the Examiner states, referring to the cited portion of Bommareddy, “the flow controller modifies the ARP requests and generates a modified ARP request on the network and sends the response back to the source server.” (Office Action, page 3.)

[0018] As amended, claim 1 clarifies that the target host is “within the cluster”, and that the generating is performed, “by the target host.” Because the flow controller described in Bommareddy is separate from the cluster, Bommareddy does not disclose the claimed, “receiving by a target host within the cluster...; and generating by the target host, ...”

[0019] Consequently, Bommareddy does not disclose all of the claimed elements and features of this claim, as amended. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

Dependent Claims 2-13 and 19

[0020] These claims ultimately depend upon independent claim 1. As discussed above, claim 1 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

[0021] For example, Applicant submits that Bommareddy does not disclose the following elements of claim 6, as amended (emphasis added):

determining *by the target host* whether the address discovery request was issued by a source host operating in the cluster mode.

[0022] With reference to claim 6, the Examiner cites Bommareddy, column 22, lines 41-48 and 61-67, and states, “the flow controller determines whether the address request originated from a device in the cluster or a device external to the network.” (Office Action, page 5.)

[0023] As amended, claim 6 clarifies that the “determining whether the address discovery request was issued by a source host operating in the cluster mode,” is performed by the target host, which, according to claim 1, is within the cluster. Because the flow controller described in Bommareddy is separate from the cluster, Bommareddy does not disclose the claimed, “determining by the target host...”

[0024] Consequently, Bommareddy does not disclose all of the claimed elements and features of this claim, as amended. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

[0025] Regarding claim 11, Applicant submits that Bommareddy does not disclose the following elements, as amended (emphasis added):

maintaining, by the target host, a list of network communication protocol-specific addresses corresponding to hosts within the cluster.

[0026] With reference to claim 11, the Examiner cites Bommareddy, column 17, lines 15-25, and states, “the flow controller maintains a hash table with the IP addresses of the cluster servers.” (Office Action, page 6.)

[0027] As amended, claim 11 clarifies that the “list of network communication protocol-specific addresses corresponding to hosts within the cluster is maintained by the target host, which, as clarified in claim 1, is a host within the cluster. Because the flow controller described in Bommareddy is separate from the cluster, Bommareddy does not disclose the claimed, “maintaining, by the target host...”

[0028] Consequently, Bommareddy does not disclose all of the claimed elements and features of this claim, as amended. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

Independent Claim 20

[0029] Claim 20, as amended, recites elements similar to those recited in claim 1, as amended. Accordingly, for reasons similar to those presented above with reference to claim 1, Bommareddy does not disclose all of the claimed elements and features of this claim, as amended. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

Dependent Claims 21-32 and 38

[0030] These claims ultimately depend upon independent claim 20. As discussed above, claim 20 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

Independent Claim 39

[0031] Applicant submits that Bommareddy does not disclose the following elements of claim 39, as amended (emphasis added):

A host computer system including physical address discovery components facilitating point-to-point communications between hosts of a cluster operating in a cluster mode wherein acceptable messages are addressed to a shared cluster address, the computer system comprising:

a network interface for receiving an address discovery request initiated by a source host seeking a physical address of a target host within the cluster;

a transport layer component for carrying out transport-protocol specific processing of network requests; and

intracluster address discovery logic interposed between the network interface and the transport layer component of the host system, the intracluster address discovery logic performing the step of:

generating an address discovery response acceptable by the source host operating in the cluster mode and including:

a response source physical address field specifying a non-cluster mode physical address of the target host,

wherein the host computer system is one of the hosts of the cluster operating in the cluster mode.

[0032] With reference to claim 39, the Examiner cites Bommareddy column 22, line 46 -- column 23, line 7. (Office Action, page 11.) With specific reference to the claimed “network interface”, the Examiner states, referring to the cited portion of Bommareddy, “router or server “source host” may send an ARP request to a traffic controller “network interface” to find out the address of destination server.” (Office Action, page 11.) With specific reference to the “generating” step, the Examiner states, referring to the cited portion of Bommareddy, “the flow controller modifies the ARP requests and generates a modified ARP request on the network and sends the response back to the source server.” (Office Action, page 11.)

[0033] As amended, claim 39 clarifies that the host computer system “is one of the hosts of the cluster operating in the cluster mode” Because the flow controller described in Bommareddy is separate from the cluster, Bommareddy does not disclose the claimed,

“host computer system...comprising a network interface...; a transport layer component...; and intracuster address discovery logic...performing the step of: generating an address discovery response...”

[0034] Consequently, Bommareddy does not disclose all of the claimed elements and features of this claim, as amended. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

Dependent Claims 40-49 and 53

[0035] These claims ultimately depend upon independent claim 1. As discussed above, claim 1 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

Independent Claim 54

[0036] Applicant submits that Bommareddy does not disclose the following elements of claim 54 (emphasis added):

A method for processing point-to-point communications between hosts of a cluster operating in a cluster mode implemented by a network communication protocol-specific layer of each host, and wherein acceptable messages are addressed to a shared cluster address, the method comprising the steps of:

receiving an intracuster message issued by an initiating host including a non-cluster mode physical address of a target host within a message destination field;

replacing, within the intracluster message by the target host, the non-cluster mode physical address ~~by~~ with the shared cluster address; and
presenting, after the replacing step, the intracluster message to the network communication protocol-specific layer.

[0037] With reference to claim 54, the Examiner cites Bommareddy column 22, lines 46 – column 23, lines 7. (Office Action, page 14.) With specific reference to the “receiving” step, the Examiner states, referring to the cited portion of Bommareddy, “router or server “source host” may send an ARP request to a traffic controller “network interface” to find out the address of destination server.” (Office Action, page 14.) With specific reference to the “replacing” step, the Examiner states, referring to the cited portion of Bommareddy, “the flow controller replaces the address field in the ARP request with its own MAC address information.” (Office Action, page 14.)

[0038] Claim 54 recites, “receiving an *intracluster* message.” Based on the definition of the prefix “intra-”, which means “within”, the message that is received, is a message “within” the cluster, meaning, as supported by the specification, that the message is both sent and received within the cluster. Because the flow controller described in Bommareddy is separate from the cluster, Applicant submits that Bommareddy does not disclose an intracluster message, and specifically does not disclose the claimed, “receiving an intracluster message...”

[0039] Consequently, Bommareddy does not disclose all of the claimed elements and features of this claim. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

Dependent Claims 55-58

[0040] These claims ultimately depend upon independent claim 54. As discussed above, claim 54 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

Independent Claim 59

[0041] Applicant submits that Bommareddy does not disclose the following elements of claim 59, as amended (emphasis added):

A method for **performing point-to-point communications between hosts of a cluster operating in a cluster mode**, wherein acceptable messages are addressed to a shared cluster address, the method comprising the steps of:

receiving **by a target host within the cluster**, an address discovery request seeking a physical address of the target host;

determining **by the target host**, that the address discovery request was issued by a source host within the cluster, operating in the cluster mode;

generating **by the target host**, an address discovery response acceptable by the source host operating in the cluster mode, the address discover response including:

a response source physical address field specifying a non-cluster mode physical address of the target host;

receiving **by the target host**, an intracluster message issued by the source host, the intracluster message including a non-cluster mode physical address of the target host within a message destination field;

replacing, within the intracluster message **by the target host**, the non-cluster mode physical address with the shared cluster address; and presenting, after the replacing step, the intracluster message to a network communication protocol-specific layer of the target host.

[0042] With reference to claim 59, the Examiner cites Bommareddy column 22, lines 41 – column 23, lines 7. (Office Action, pages 16-17.) With specific reference to the first “receiving” step, the Examiner states, referring to the cited portion of Bommareddy, “router or server “source host” may send an ARP request to find out the address of destination server.” (Office Action, page 16.) With specific reference to the “generating” step, the Examiner states, referring to the cited portion of Bommareddy, “the flow controller modifies the ARP requests and generates a modified ARP request on the network and sends the response back to the source server” (Office Action, page 14.)

[0043] As amended, claim 59 clarifies that the target host is “within the cluster” Because the flow controller described in Bommareddy is separate from the cluster, Bommareddy does not disclose the claimed, “receiving by a target host within the cluster, an address discovery request...determining by the target host...generating by the target host...”

[0044] Consequently, Bommareddy does not disclose all of the claimed elements and features of this claim, as amended. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

Dependent Claims

[0045] In addition to its own merits, each dependent claim is allowable for the same reasons that its base claim is allowable. Applicant requests that the Examiner withdraw the rejection of each dependent claim where its base claim is allowable.

Conclusion

[0046] All pending claims are in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the application. If any issues remain that prevent issuance of this application, the **Examiner is urged to contact me before issuing a subsequent Action.** Please call/email me or my assistant at your convenience.

Respectfully Submitted,

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